

CLAIMSWhat is Claimed is:

1. An audiometric apparatus for testing hearing, comprising:
 stimulus generating means for transmitting at least one true random
 stimulus sequence to a subject's inner ear; and
 detection means for detecting the response signal returned from the
 subject's inner ear in response to said stimulus sequence.

2. The audiometric device of Claim 1, wherein said apparatus includes
 analyzer means for controlling the stimulus generating means and analyzing said response
 signal.

3. An audiometric apparatus for testing hearing, comprising:
 stimulus generating means for transmitting at least one stimulus sequence
 to a subject's inner ear; and
 sampling means for detecting the response signal returned from the
 subject's inner ear in response to said stimulus sequence, said response signal having at
 least a first waveform, said sampling means including waveform reconstruction means for
 reconstructing said first waveform, said reconstruction means including means for
 applying a plurality of true random frequencies to said response signal.

4. The audiometric device of Claim 3, wherein said apparatus includes
 analyzer means for controlling said sampling means.

5. The audiometric device of Claim 4, wherein said analyzer means includes
 means for analyzing said first waveform.

6. An audiometric apparatus for testing hearing, comprising;
 stimulus generating means for transmitting at least one stimulus sequence
 to a subject's inner ear; and
 sampling means for detecting the response signal returned from the
 subject's inner ear in response to said stimulus sequence, said response signal having at
 least first and second waveforms, said first waveform comprising a true response signal,
 said second waveform comprising a noise signal, said sampling means including
 waveform reconstruction means for reconstructing said first waveform, said reconstruction
 means including means for applying a plurality of true random frequencies to said first and
 second waveforms whereby data substantially reflective of said first waveform is acquired.

7. An audiometric apparatus for testing hearing, comprising:
stimulus generating means for transmitting at least one true random
stimulus sequence to a subject's inner ear; and
sampling means for detecting the response signal returned from the
subject's inner ear in response to said stimulus sequence, said response signal having at
least a first waveform, said sampling means including means for applying a plurality of
true random frequencies to said response signal to reconstruct said first waveform.

8. The apparatus of Claim 7, wherein said apparatus includes analyzer means
for controlling the stimulus generating means.

9. The apparatus of Claim 8, wherein said analyzer means includes means for
controlling said sampling means.

10. A method of testing the hearing of a subject, comprising the steps of:
presenting at least one true random stimulus sequence to said subject's
inner ear; and
detecting the response signal returned from the subject's inner ear in
response to said stimulus sequence.

11. The method of Claim 10, wherein a plurality of said true random stimulus
sequence is presented to said subject's ear.

12. A method of testing the hearing of a subject, comprising the steps of:
presenting at least one stimulus sequence to said subject's inner ear;
detecting the response signal returned from the subject's inner ear in
response to said stimulus sequence, said response signal having at least one waveform;
sampling said response signal waveform by applying a plurality of true
random frequencies to said response signal, said sampling providing at least a first set of
response signal data;
recording said first set of response signal data; and
reconstructing said response signal waveform from said first set of response
signal data.

13. A method of testing the hearing of a subject, comprising the steps of:
presenting at least one true random stimulus sequence to said subject's
inner ear;
detecting the response signal returned from the subject's inner ear in
response to said stimulus sequence, said response signal having at least one waveform;

sampling said response signal waveform by applying a plurality of true random frequencies to said response signal, said sampling providing at least a first set of response signal data;

recording said first set of response signal data; and

5 reconstructing said response signal waveform from said first set of response signal data.

14. A method of testing the hearing of a subject, comprising the steps of:
presenting at least one true random stimulus sequence to said subject's inner ear; and

10 detecting the response signal returned from the subject's inner ear in response to said stimulus sequence.

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